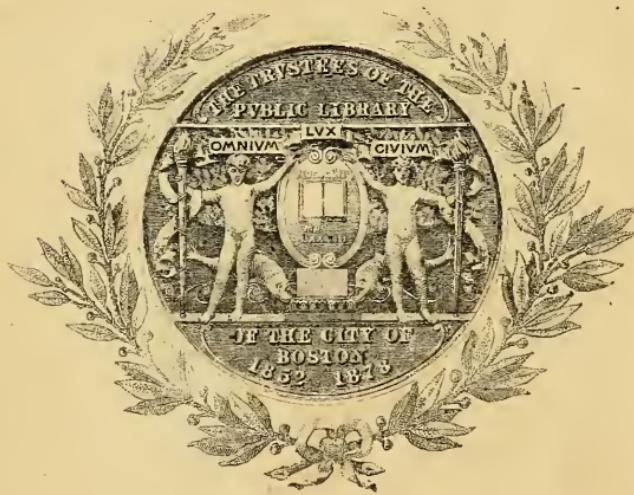
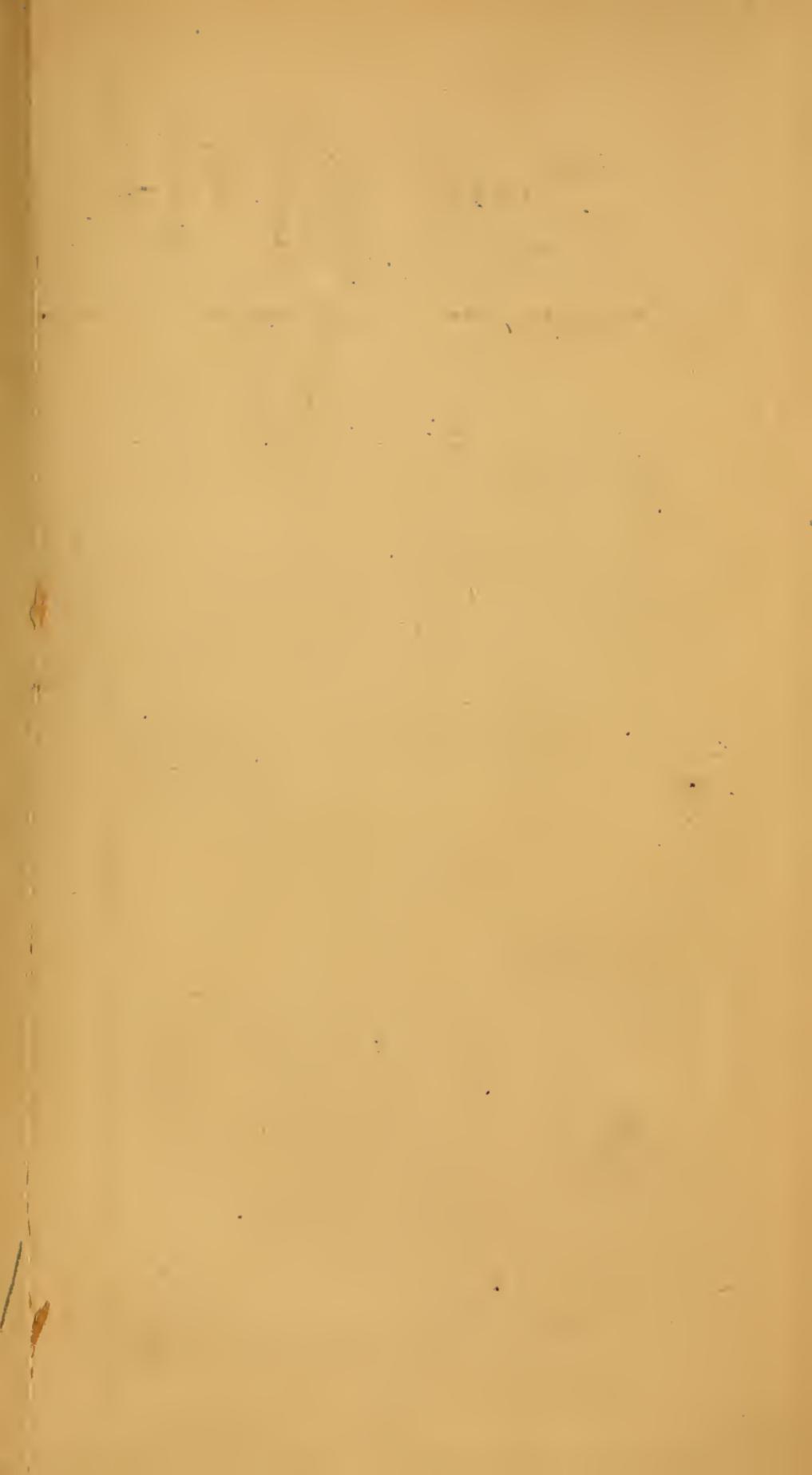


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17

City Document.—No. 19.

CITY OF BOSTON.

SOFT WATER.



In Common Council, May 2, 1839.

This Report from the Standing Committee on Water, with the Resolve accompanying, were read, the Resolve passed to a second reading, and the document ordered to be printed for the use of the City Council.

Attest, RICHARD G. WAIT, Clerk C. C.

Boston, April 29, 1839.

To the City Council.

GENTLEMEN,

In obedience to instructions given by the Joint Standing Committee on the introduction of a supply of Soft Water into the City, I present to you the following report respecting the course adopted by the Committee in relation to the petition of the City to the Legislature, the proceedings had on that petition, and their result.

It will, doubtless, be recollected that the Mayor was instructed, by a vote which passed the Council on the sixth day of April, 1838, to apply to the Legislature for the powers necessary to bring water to the City, either from Long Pond, or from Spot and Mystic Ponds. This application was immediately made, but the session of the Legislature was then so near its close that it was deemed proper to refer the consideration of the subject to the session of the next year, in order that other corporations and individuals interested might have ample notice of the wishes and projects of the City. The Revised Statutes having made provision for giving notice of petitions to the General Court before the commencement of the session, it was thought desirable to take advantage of that means of bringing the subject to the attention of the Legislature at the earliest possible period, so that there might be time enough to ensure its action on the petition. Notice was accordingly given to all the towns which were known or supposed to be interested, by serving a copy of the petition on their

clerks severally, within the period prescribed by law, and by publication in all the newspapers that print for the City. The municipal government of this year was organized on the seventh day of January, and on the tenth the petition was presented to the House of Representatives, where it was referred to Messrs. Hunting, Poor and Spooner, to whom were added by the Senate Messrs. Armstrong and Willard. On the seventeenth, this Committee reported a bill containing such provisions as the Committee of the City Council on the Introduction of Water thought desirable. On the twenty third,—remonstrances having been presented to the Legislature by several towns, the Middlesex Canal, and sundry inhabitants of Boston, against the project of the City,—the bill was recommitted, for the purpose of giving a hearing to those who might deem themselves injured by the execution of the plan. On the 24th and 30th January, and the 1st and 6th February, accordingly, remonstrants appeared and were heard in behalf of the towns of Medford, Malden, and the heirs of Barrett, who thought that their respective interests in the ponds proposed to be taken, or their outlets, would be injuriously affected in various ways. Their statements went merely, or principally, to show that the remonstrants would be damaged, if the powers prayed for were granted to the City. It was, indeed, intimated, though not strongly urged, by one of the counsel, that the injury which would be caused by the contemplated diversion of certain waters was of such extent, and of such a kind, that it could not be compensated in the manner proposed in the bill, and therefore that it was a sufficient rea-

son for refusing the grant of powers that might cause such irreparable injury. This argument was much more strongly pressed by the counsel for the Middlesex Canal, who went so far as to contest the constitutional right of the Legislature to grant to the City the powers it asked.

The Middlesex Canal and the remonstrants from the City first appeared on the 12th of February, and stated that it would be convenient to them to adjourn their further appearance for some time, the one party for the purpose of obtaining the evidence of a witness who was then sick, and the other to gather statistical information on the subject. The Committee, in compliance with this suggestion, adjourned for fifteen days, viz: to the 27th of February, when the Canal Corporation produced the deposition of their agent respecting the injury which would ensue to their property from diverting the water of Long Pond, and their counsel concluded his argument on the subject. The counsel for sundry inhabitants of the City, opposed to the project, then opened their case, and on the following day commenced the examination of witnesses under oath, to show that notwithstanding the City, in its corporate capacity, and by its municipal government, had applied for power to introduce water from one of two sources, there was no real need of any such thing being done, that no public exigency had arisen requiring water to be brought for the inhabitants of Boston from adjoining towns, and therefore that the City ought not to have, nor the Legislature to grant the powers necessary for the completion of this great work.

In the course of this examination, which occupied

six successive sessions of the Committee, viz: on the afternoons of the 28th of February, and the 1st, 5th, 6th, 7th and 14th of March, much time was lost in discussions between the counsel for the City and those for the remonstrants, as to the relevancy of certain questions, and the propriety of putting them to the witnesses. The professional practice in courts of law was, to some extent, though of course very imperfectly, introduced in this hearing; at least, the technical rules of such tribunals seemed to be considered by the remonstrants' counsel suitable to the occasion. One effect of this peculiar mode of conducting an examination of this sort before a legislative committee was a great loss of time, of which much was also spent in adjournments, of a fortnight once, and next of a week. The whole of the session, and doubtless many months more, might have been passed in this examination of witnesses for the remonstrants; but but after repeated and very urgent efforts to obtain a hearing on the part of the City, the 15th of March was at length assigned for the examination of witnesses on that side, and the afternoons of the 15th, 18th, 21st, and 22d March were devoted to the examination of witnesses brought forward by the City to show the propriety and importance of the application. On the 25th, the Committee again met, and after a few moments' attention to the business, the Chairman stated that there was no longer sufficient time left, in the probable duration of the session of the legislature, to make up their minds upon a report, and therefore that they should recommend a reference of the subject to the next session. A report to this effect was accordingly made to the Senate, which on the 4th of April was re-committed with in-

structions to report a bill, and on the discussion which arose upon the bill they were directed to bring in a resolve for the appointment by the Governor of Commissioners to examine the whole subject. This resolve was subsequently reported, and passed both houses, and received the Executive sanction on the 9th of April. It is in the following words.

COMMONWEALTH OF MASSACHUSETTS.

In the year one thousand eight hundred and thirty nine.

Resolve concerning the introduction of Soft Water into Boston.

Resolved, That the Governor of the Commonwealth with the advice of the Council, is hereby authorized, on the application of the City of Boston, to appoint three Commissioners who shall, at the expense of said City, after having given such notice to all parties interested as they shall think reasonable, ascertain and report to the next General Court, all the facts and information which they may deem material, in relation to the several plans proposed by said City for the introduction of Soft Water into Boston, and the bearing of the same upon the interests of all persons and corporations which may be affected thereby.

[Passed April 9, 1839.]

It would be difficult to find, on the records of any legislature, a more remarkable result of a three months' investigation of a subject which, for several years, had occupied the attention of an important portion of the community. Indeed the whole course

of the branch of the inquiry affecting the City was, in many respects striking and novel. The action of the City by its own representative government, and by its corporate votes was held of little or no account. In the face of votes of the government and of the citizens at large, individuals who were no otherwise interested than as they, like others, were taxable inhabitants of the City, and who, in common with others, had exercised their right of selection among the candidates for office both in the state and municipal government, were permitted to object to the doings of their own agents, and irrevocable time was spent in modes, and on subjects of inquiry which might, with safety to the Commonwealth, and with justice to all parties interested, have been saved. The resolve of the legislature authorizes the Executive to appoint Commissioners to do what, so far as regards the City interests, has been the object of the greatest attention of the citizens, and of the most diligent investigation by its various agents, for many years; and so far as regards the interests of other towns and corporations, has been the subject of inquiry during the last session of the legislature, by the very Committee who were instructed to report the resolve.

It is now for the City Council to determine whether they will incur the expense of a new commission to do what has already been done by itself, or ought to be done by the Legislature. With respect to the City, agent after agent has been appointed, at no inconsiderable cost, to determine what is for its interest; and with respect to other towns and corporations, the Legislature is the constituted protector of

all its citizens from usurpation, and ought, therefore, to bear the expense of any measures which it deems necessary for their protection. The Committee of the City Council have instructed me to express their opinion that it is inexpedient for the City to take any action on the subject under the resolve of the Legislature.

I should do injustice to the eminent services of the City Solicitor, did I omit to mention his exemplary fidelity to the interests of the City, even on this extra official duty. He was present, by request, at the numerous meetings of the Committee, and conducted the case with ability and judgment, replying with success to the legal and constitutional arguments of the distinguished counsel engaged by the various remonstrants.

It may not be uninteresting to add that an arrangement will very probably be made, by which the minutes of evidence on both sides, of any importance, will be preserved in a permanent form. This evidence, though very far short of what might, on a proper occasion, have been presented, showed many facts which have an important bearing on the necessity of an abundant supply of water to the City. Without exclusively relying on the testimony given before the Committee, it will, perhaps, be considered a suitable occasion now to offer some views and arguments which have not been heretofore distinctly presented, to show in what manner benefits, of various kinds, will result to the inhabitants from a copious supply of pure water, which may be relied on with a good degree of certainty.

It is not necessary to show that the supply now

furnished from wells and cisterns is poisonous, or actively deleterious, in order to convince reflecting persons that an abundant quantity of water, of a purer quality, would contribute, in many important ways, to the health of the community. It would diminish the temptation to mix other liquors with it, and would consequently aid the cause of temperance, and therefore the public health. It would favor the use of the bath, and in this way would promote health, and the virtue of personal cleanliness, more than will readily be conceived by those unaccustomed to this simple, yet inestimable luxury. It would facilitate what is now one of the favorable distinctions of Boston, the cleanliness of the streets, and add new security to the health of the inhabitants, so far as clean streets and well washed sewers are to be considered as means of promoting it. Pure water must also undoubtedly be regarded as a necessary remedy in many cases of serious disease. The operation of permanent causes, though it may be slow, is constant; and if the gradations of improvement be imperceptible at short intervals, the result is not the less important in lengthened periods. Habits of cleanliness and temperance are of infinite importance to any community, both morally and physically, though none can say that the single draught of intoxicating liquor is deadly, or that the single ablution will prevent disease.

In the City Charter all measures tending to the improvement, not merely of "the finances and the police, but of the health, security, cleanliness, comfort and ornament of the City," are designated as proper objects of the attention of the municipal gov-

ernment. It is not therefore unworthy of the subject to remark that the convenience, comfort and ornament of fountains have, in all ages and countries been felt and acknowledged, and that some amount of expense would be justifiable, in a wealthy community, for these objects alone. When combined, however, as this project obviously may connect them, with advantages to the health, security, cleanliness, and as it may be made to appear, to the finances of the City, it would seem that nothing further was requisite to induce all to promote it with zeal and effect. Its bearing upon the security of the City, in case of fire, is too clear to require to be dwelt on, and may also be counted as one of the points of the financial advantage of the scheme. The amount of property covered by insurance against fire in this City cannot be estimated as less than \$100,000,000—and the reduction of 1-10 of one per centum on that amount is \$100,000. Does any one imagine that the security derived from reservoirs more elevated than the roofs of all but a very few houses, and fire plugs at the distance of 100 feet from each other will not diminish the cost of insurance much more than that sum? Probably \$150,000 per annum would be a very moderate allowance for the saving in this particular. This is an item which reaches every individual citizen, both in his person and property; for it makes no difference, with regard to the latter, whether he pays an office for insuring him, or runs his own risk. It is equally an item of charge upon the property. And many a life would be saved if a prompt supply of water were always at hand.*

*During the last ten years *eighteen* persons have been burnt to death, and *seven* others have died from injuries received at fires.

Not only would the safety of life and property be thus increased, but a great saving of expense would be made, in consequence of the abundance of water rendering unnecessary any extension of the Fire Department, and the system of reservoirs. There are now 49 reservoirs, (to be increased to 51 during the present season,) and whenever the City shall double in population, they should also be doubled, to maintain an equal security with that which now exists; and it would be highly desirable, certainly, to increase the number, even in those parts of the City which are best supplied. One hundred additional reservoirs, at a cost of \$1,000 each, is but a moderate allowance for this source of expense, within the next twenty years, if the water project be not executed. If it be, all this may be saved, and in addition, it will be unnecessary to increase the number of engines, and the force of the Fire Department, as would otherwise be inevitable. Experience has proved that half a dozen streams of water, steadily poured, are enough to master any fire which is not aggravated by a strong wind;—and then, no force can prevent it from spreading. When, therefore, every engine can play from a fire plug upon the flame, a small number of them, which can be easily collected in any part of the City, if they are properly distributed, will be able to effect all that is necessary in ordinary cases. Without the introduction of water, an increase of one half of the present department would be deemed, probably, the least that would be necessary within twenty years; whereas, with it, the present department would be sufficient, or a very slight increase would make the provision for this service ample. An addition of one half

to the present expense of the Department would be \$20,000 per annum.

One of the items of City property which is of no slight importance, and has always been regarded with especial interest, as a principal means of extinguishing the City debt, is the public land at the southern extremity of the peninsula. This is variously estimated by different persons as worth from a half a million to a million of dollars. Probably its true value would be very nearly the mean of the two sums \$750,000. It is the opinion of persons who have been particularly acquainted with the condition and management of those lands, that an abundant supply of water to those parts not already furnished with a sufficient quantity—seven eighths of the whole, probably—would add much to their saleableness, and not less than ten per cent. to their price. This would add \$75,000 to the City property, and give a ready sale to an estate which wants nothing but water to make it speedily available.

In all the foregoing modes of saving which will be effected by the introduction of water, every citizen is manifestly interested who has any tax to pay. The following may, at first, be thought less general in its operation; but a little examination will show that its effect will, sooner or later, extend to the great majority, if not to the whole, of the inhabitants. If the City increase to double its present numbers, it is presumable that an equal number of wells and cisterns must be dug to accommodate the new comers, as now exists to supply the present residents. There are now about 3,000 wells which, being of all depths from 15 to 100 feet, and in a few instances more,

have cost all sums between \$50 and \$300, generally requiring \$3 a foot, including the pump. It will scarcely be thought an extravagant estimate to suppose them to average 40 feet in depth, and \$120 in cost. The whole, therefore, would amount to \$360,000.

The cisterns also cost various prices from \$30 up to \$300, according to their size and material. Their number has never been ascertained, as was that of the wells a few years ago, but it will probably be conceded that there are as many as 2,000 of all descriptions, and that the average cost is \$50, making an aggregate of \$100,000, and for both descriptions of water \$460,000. All this, and probably much more, must be repeated for the accommodation of the next 80,000 inhabitants of the City, as the wells must be dug deeper, particularly on the Neck lands. It may be said that the present aqueduct will supply that section of the City; but it will scarcely be contended that it could supply all the inhabitants who might dwell on that extent of territory, or if it could, that there would be enough left for its former customers. Half a million of dollars must be spent, then, by the proprietors of the real estate, on which 80,000 new inhabitants of the City must live, which may be saved by the introduction of water. Nor is this all. The increase in buildings, and in the number of wells, in any portion of the City, has a twofold tendency to exhaust the supply. In the first place, the water which, before the erection of dwellings, and the paving of streets and of yards, percolated through the soil, and formed springs, and supplied wells, is cut off, and the supply must come entirely from a distance, as the rains now flow over the surface into the ocean.

Then the frequent tapping of the same spring at last dries it up, and the well must be deepened, either to find a new spring, or to prevent a neighbor from drawing off the water. Thus one well after another is deepened, and the lowering of one renders that of another, or of many others, necessary; and this operation is very likely to extend over the whole City, and to be repeated from year to year. It has already happened very frequently, and mutual vexation and loss have been caused in many neighborhoods by the failure of this necessary of life. No man can safely say, therefore, that he is supplied, and sees no occasion for paying a tax to save his neighbor the expense he has incurred in digging a well. While the words are in his mouth his neighbor may be drying his well by the digging of another, which would have been rendered unnecessary by the introduction of an abundant supply from sources which might be relied on. Then comes the necessity of deepening, an operation very much more costly than the original construction of the well. If one third part of the existing wells should require deepening in the next twenty years, it will probably cost nearly, or quite as much as the original construction of the whole, or another \$360,000, and if we may form any judgment of what will happen by the experience of the last few years, a much larger proportion of ancient wells must be deepened. It will not pass the bounds of probability, then, to suppose that a sum equal to the original cost must be spent in deepening existing wells, if a supply be not brought from the vicinity.

There are various other ways in which money and labor, costing money, would be saved by the operation; but as they are scarcely susceptible of estimate,

they are hardly a proper basis for calculation. Some of them, however, well deserve to be mentioned, at least that every one may judge for himself of their weight. One is the saving of fuel which, it is well known, is made by using soft and pure water for culinary purposes, instead of the saline fluid common in Boston. An economy of even a small per centage on the whole amount of fuel consumed in a year, by six or seven thousand daily fires, must be no inconsiderable item. Another is the saving of labor which, it is manifest, would be the result of exchanging the slow and toilsome process of pumping from 5,000 wells and cisterns, or from 10,000 of them, as may be the case in twenty years, for the rapid gush of water under strong pressure, wherever it may be wanted. If this labor were all specifically paid for by every family, every day, it would be found no trifling expense. Is it any smaller expense because it is included in the price of wages, and cannot easily be estimated by itself?

What has been stated in figures may, perhaps, suffice to show the economy of the operation. The following are the items.

Cost of new wells and cisterns,	\$460,000
Deepening of old wells,	360,000
One hundred reservoirs,	100,000
Increased value of City lands,	75,000

	\$995,000
Interest on amount at 6 per cent.,	\$59,700 00
Saving of Insurance,	150,000 00
" in Fire Department,	20,000 00

Making an annual saving of	\$229,700 00

If the project, therefore, should cost four millions and a half, there would still be a saving, if the City should be able to borrow the money at five per cent. All this, be it observed, is on the supposition that no rent is derived from the water, a result there is no reason to apprehend. On the contrary, there is much probability that the income from the water rents might pay the interest on the loan, and at no distant period, discharge the debt created for the purpose; so that all the immense benefits arising in so many ways to the health, the morals, the comfort, the security of the inhabitants, and the cleanliness and ornament of the City, may be obtained in a way which would never be felt as a burden by any one, and by the temporary payment of a tax which would be submitted to with the utmost cheerfulness by the public, who would feel the relief from the heavier burdens which have been enumerated, and the new and very great convenience of the supply. When it is considered that the whole may perhaps be completed for the sum of one million of dollars, the interest of which would be but \$50,000, it would seem that inducements enough were offered to begin and complete the enterprize.

Few persons will deny that the estimates of economy above stated are much below the probable truth. But if they be not entirely irrational, the aggregate must surely, on any estimate, justify the City government in an expenditure which will produce so many benefits, and for which there are so many modes of compensation. It is sometimes urged against the undertaking that it is impossible to rely on estimates, and that if that of the Water Commis-

sioners in their late report be doubled, it would still fall short of the actual cost. Certainly it cannot be denied that estimates are often erroneous; but would it be rational, therefore, entirely to disregard them, and begin important enterprizes without them,—or forever sit still, because we cannot tell precisely what it will cost to move? All human undertakings ought to be made with reference to a well calculated probability; and allowing that the opponents of the scheme are so much more sagacious than the Commissioners, it is possible that it might be found wise to expend even three millions for the object. But if its friends are correct, the estimate errs by being somewhat higher than is at present necessary.

There are but two objections, besides that of the expense, which have been much dwelt on in argument. One is that the work could be more economically done by a private corporation; and if the profit is to be so great as is anticipated, there can be no difficulty in finding capital to embark in the speculation.

It may appear, from some of the considerations above stated, that it might be extremely advantageous and important to the City to introduce water, on account of the many public uses to which it may be put, without its being desirable as a private enterprise. But supposing it to be as much so to one sort of corporation as the other, does it follow that the municipal government should surrender, to such an extent as would be inevitable, its control over the streets, the water rents, and the solidity and capacity of the works? And all this for what purpose? To save an inconsiderable amount on a work of the ut-

most importance to the whole community, and in which, therefore, those who represent the whole community, would seem its most proper agents.

The other objection is that the time has not arrived ;—that the City should grow both in numbers and in wealth, before so heavy a debt is added to its already heavy burdens. According to this argument, which implies entire disbelief in all which goes to show the economy of the plan, the City should wait till suffering and evil actually arrive, before attempting to provide a remedy. The present impurity of the water in the City is not enough. We must wait till it becomes an intolerable nuisance, or till it obviously produces disease and death. It is not enough that many instances are known to have already occurred, in which both the rich and the poor have been compelled to pay three or four times as much, for a small quantity of hard water, as the City would require in rent for an abundance, of the purest quality, were the cost of the works as high as has ever been imagined by the opponents of the plan. It is not enough that wells should be dug, as they now are in this City, on speculation, and the cost, though heavy, should be paid in a year or two by those whose necessities compel them to purchase rights of the thrifty proprietors. It is not enough that in the more crowded parts of the City, the most violent contests should frequently occur, to obtain enough of a hard, brackish fluid, not for purposes of luxury, nor even of cleanliness, for it is incapable of answering either, but merely to sustain life in those filthy, wretched abodes of squalid poverty, which might at once be rendered comparatively neat and wholesome by an abundant supply of what has never yet been seen there, pure water.

If we wait for the debt to be paid before we begin to introduce water, it will indeed be an indefinite postponement of the enterprize. But if there be any truth in what has now been urged, we should begin the work immediately, that we may be relieved from some of our present burdens, and therefore better able to pay off the debt. We should begin immediately, that we may attract residents, and induce them to remain with us, by the purity and abundance of our supply of water, among the many advantages of our City. We should begin immediately, that we may prevent the anticipated evils of an inadequate supply, as well as the present evils of impure water. Whatever may be the inducements of business or pleasure to a residence in the City, they will assuredly be more than counterbalanced by a scarcity of a necessary of life. A wise government foresees evil, and provides a timely remedy. A prudent government spends money for purposes that will add to its resources.

But however desirous the Committee may be to see a beginning of the important work of supplying the City with soft water, they do not think it expedient for the City to act under the resolve of April 9, thinking it better to pursue the usual course of applying directly to the Legislature at the earliest opportunity. They therefore recommend the passage of the following resolve.

For the Committee,

SAM'L A. ELIOT.

Resolved, That it is inexpedient for the City to apply to the Executive of the Commonwealth for the appointment of Commissioners, under the resolve of the legislature of the ninth of April last, to examine the subject of the Introduction of Soft Water into Boston.

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